

**UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE**

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R070XC104NM

Site Name: Deep Sand

Precipitation or Climate Zone: 13 to 16 inches

Phase:

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs as the coarse-textured eolian and alluvial sediments on the upland plains. Slopes are nearly level to gently undulating, generally less than 5 percent. Low stabilized hummocks or dunes frequently occur. Exposure varies and is not significant. Elevations range from 5,000 to 7,000 feet above sea level.

Land Form:

1. Plain
2. Sand sheet
- 3.

Aspect:

1. N/A
- 2.
- 3.

	Minimum	Maximum
Elevation (feet)	5,000	7,000
Slope (percent)	0	5
Water Table Depth (inches)	N/A	N/A
Flooding:	Minimum	Maximum
Frequency	N/A	N/A
Duration	N/A	N/A
Ponding:	Minimum	Maximum
Depth (inches)	N/A	N/A
Frequency	N/A	N/A
Duration	N/A	N/A

Runoff Class:

Negligible to medium.

CLIMATIC FEATURES

Narrative:

The average annual precipitation ranges from 13 to 16 inches. Variations of 5 inches, more or less, are not uncommon. Seventy-five percent of the precipitation falls from April to October. Most of the summer precipitation comes in the form of high intensity-short duration thunderstorms.

Temperatures are characterized by distinct seasonal changes and large annual and diurnal temperature changes. The average annual temperature is about 50 degrees F with extremes of -29 in the winter and 103 degrees F in the summer.

The average frost-free season is 130 to 160 days. The last killing frost is in early May and the first killing frost is in early October.

Both temperature and precipitation favor warm-season species. However, about 40 percent of the precipitation falls at a time favorable to cool-season plant growth. This allows the cool-season plants to occupy an important component of this site. Because of the soils on this site, the plant community can respond quickly to any precipitation during the frost-free period. Also, because of the soil, strong winds that blow from the west and southwest from February to June can dry the soil profile rapidly during a critical period for plant growth. These strong winds can also cause the soil to blow. Wind-blown particles cause plant damage and reduce growth.

Climate data was obtained from <http://www.wrcc.sage.dri.edu/summary/climsmnm.html> web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

	Minimum	Maximum
Frost-free period (days):	131	173
Freeze-free period (days):	155	187
Mean annual precipitation (inches):	13	16

Monthly moisture (inches) and temperature (°F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	.34	.92	15.6	42.1
February	.34	.81	19.9	52.9
March	.23	.98	24.4	59.7
April	.39	.96	31.4	68.9
May	.85	1.61	39.2	77.7
June	.89	1.62	46.9	87.1
July	1.77	2.75	53.1	88.5
August	2.46	3.22	51.9	85.7
September	1.54	2.26	44.3	80.4
October	1.0	1.51	32.8	70.5
November	.57	1.02	22.2	57.5
December	.34	1.16	15.9	49.3

Climate Stations:

Station ID	Location	Period	
		From:	To:
291918	Clines Corners 7 SE, NM	12/10/68	11/30/00
292096	Corona 11 SSW, NM	12/1/77	9/30/92
293060	Estancia, NM	01/01/14	12/31/00
293649	Gran Quivira Natl. Monument, NM	06/01/38	12/31/00
295965	Mountainair, NM	03/01/14	12/31/00
299405	Vaughn, NM	01/01/71	12/31/00

INFLUENCING WATER FEATURES**Narrative:**

This site is not influenced by water from wetlands or streams.

Wetland description:

System	Subsystem	Class
N/A		

If Riverine Wetland System enter Rosgen Stream Type:

N/A

REPRESENTATIVE SOIL FEATURES

Narrative:

The soils on this site are deep and excessively drained. The surface textures are loamy fine sand and sand that extend to a depth of 60 inches or more. The soils are rapidly permeable and a low water-holding capacity. Surface runoff is very slow. Drying surface is fast and soil blowing hazard is high.

Parent Material Kind: Eolian Sands

Parent Material Origin: Sandstone - unspecified

Surface Texture:

1. Loamy fine sand
2. Sand
3.

Surface Texture Modifier:

1. N/A
2.
3.

Subsurface Texture Group: Loamy fine sand

Surface Fragments <=3" (% Cover): N/A

Surface Fragments >3" (% Cover): N/A

Subsurface Fragments <=3" (%Volume): N/A

Subsurface Fragments <=3" (%Volume): N/A

	Minimum	Maximum
Drainage Class:	Excessively	+
Permeability Class:	Rapid	+
Depth (inches):	60	>72
Electrical Conductivity (mmhos/cm):	0.00	2.00
Sodium Absorption Ratio:	N/A	N/A
Soil Reaction (1:1 Water):	7.4	8.4
Soil Reaction (0.1M CaCl2):	N/A	N/A
Available Water Capacity (inches):	3	6
Calcium Carbonate Equivalent (percent):	N/A	N/A

PLANT COMMUNITIES

Ecological Dynamics of the Site:

Plant Communities and Transitional Pathways (diagram)

Plant Community Name: Historic Climax Plant Community

Plant Community Sequence Number: 1 **Narrative Label:** HCPC

Plant Community Narrative: Historic Climax Plant Community

The site is a grassland characterized by both warm- and cool-season perennial tall and mid-grasses, low growing shrubs and half-shrubs, and a variety of forbs. Forb production fluctuates greatly from year to year. In years of significant spring and fall moisture, forb composition and production are a very important part of the plant community.

Canopy Cover:

Trees	0 – 1 %
Shrubs and Half-shrubs	5 – 8 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	15 – 20
Bare ground	55 – 65
Surface cobble and stone	0 – 1
Litter (percent)	8 – 10
Litter (average depth in cm.)	2

Plant Community Annual Production (by plant type): _____

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	200	940	1,680
Forb	20	94	168
Tree/Shrub/Vine	20	94	168
Lichen			
Moss			
Microbiotic Crusts			
Totals	250	1,175	2,100

Plant Community Composition and Group Annual Production:

Plant Type - Grass/Grasslike

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	BOGR2 PLJA	Blue Grama Galleta	118 - 176	118 – 176
2	BOER4	Black Grama	59 - 118	59 – 118
3	SCSC ANGE BOBA3 ANHA	Little Bluestem Big Bluestem Cane Bluestem Sand Bluestem	118 - 294	118 – 294
4	ACHY	Indian Ricegrass	118 - 176	118 – 176
5	BOCU	Sideoats Grama	59 - 118	59 – 118
6	PAVI2 SONU2 CAGI3	Switchgrass Indiangrass Giant Sandreed	59 - 118	59 – 118
7	HENE5 HECO26	New Mexico Feathergrass Needleandthread	35 - 59	35 – 59
8	SPCR SPFL2 SPCO4 SPGI	Sand Dropseed Mesa Dropseed Spike Dropseed Giant Dropseed	118 - 176	118 – 176
9	2GRAM	Other Grasses	59 - 118	59 - 118

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
10	ERIOG	Wildbuckwheat	12 - 35	12 – 35
11	HEAN3	Annual Sunflower	12 - 35	12 – 35
12	CROTO	Croton	12 - 35	12 – 35
13	2FORBS	Other Forbs	12 - 35	12 - 35

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
14	ARFI2 ARBI3	Sand Sagebrush Bigelow Sagebrush	59 - 118	59 – 118
15	RHTR RHMI3	Skunkbush Sumac Littleleaf Sumac	24 - 59	24 – 59
16	DAFO	Feather Dalea	12 - 35	12 – 35
17	2SD	Other Shrubs	12 - 35	12 – 35

Plant Type - Lichen

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Moss

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Microbiotic Crusts

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Other grasses that could appear on this site include: alkali sacaton, threeawn spp., sandhill muhly, purple lovegrass, ring muhly, bottlebrush squirreltail, western wheatgrass, plains bristlegrass, green sprangletop, and bush muhly.

Other shrubs include: ephedra spp., winterfat, rabbitbrush, broom snakeweed, fourwing saltbush, yucca spp., cacti spp., juniper, pinyon, algerita, and oak spp..

Other forbs include: Tansymustard, locoweed spp., red stem milkvetch, scarlet globemallow, mariola, sand verbena, goldenweed, and threadleaf groundsel.

Plant Growth Curves

Growth Curve ID 4304NM

Growth Curve Name: HCPC

Growth Curve Description: Mixed warm and cool-season mid and tall perennial grassland with shrubs and half-shrubs and forbs.

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	5	7	10	15	25	25	8	5	0	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

Habitat for Wildlife:

This range site produces a habitat which supports a resident animal community characterized by pronghorn antelope, kit fox, badger, desert cottontail, spotted ground squirrel, southern plains woodrat, Ord's kangaroo rat, plains pocket mouse, northern grasshopper mouse, Botta's pocket gopher, sparrow hawk, mourning dove, meadowlark, chipping sparrow, plains spadefoot toad, eastern fence lizard, plateau whiptail, short-horned lizard, and prairie rattlesnake. Common raven and prairie falcon hunt over this site. Where dense stands of large pinyon, juniper or ponderosa pine occur, woodland wildlife species such as mule deer, gray fox, rock squirrel, Harlequin quail, pinyon jay, scrub jay, and Cassin's kingbird become characteristic.

Hydrology Functions:

The runoff curve numbers are determined by field investigations using hydrologic cover conditions and hydrologic soil groups.

Hydrologic Interpretations

Soil Series	Hydrologic Group
Benevides	A
Mido	A
Valent	A

Recreational Uses:

This site offers fair potential for hiking, horseback riding, nature observation, photography, camping and picnicking. It also offers fair to good opportunity for hunting pronghorn antelope, mourning dove, quail, and varmints. Trapping fur-bearing animals is good. Natural beauty is dependent upon scattered flowering shrubs and forbs and the open grassland character of the site.

Wood Products:

This site has no significant potential for wood products.

Other Products:**Grazing:**

This site is suitable for grazing by all kinds and classes of livestock during all seasons of the year. This site can respond rapidly to good management and responds best to a system of grazing which rotates the season of use. This site is poorly suited for continuous year-long grazing. If grazing is continued year long or grazing pressure is too heavy, the dominant grasses such as black grama, little bluestem, cane bluestem, sand bluestem, Indian ricegrass, and sideoats grama will decrease rapidly. This will cause a corresponding increase in woody species, annuals, and grasses like threeawn, sand dropseed, sandhill muhly, and ring muhly. This will also cause a decrease in the forage production. Severe site deterioration is characterized by increased amounts of bare soil which causes soil blowing and hummocking. The site is sometimes invaded by woody species such as pinyon and juniper, or in rare cases, ponderosa pine, and may support relatively long-lived stands of these species.

Other Information:**Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month**

Similarity Index	Ac/AUM
100 - 76	2.0 – 2.8
75 – 51	2.6 – 4.4
50 – 26	3.3 – 7.0
25 – 0	7.0+

Plant Part	Code	Species Preference	Code
Stems	S	None Selected	NS
Leaves	L	Preferred	P
Flowers	F	Desirable	D
Fruits/Seeds	F/S	Undesirable	U
Entire Plant	EP	Not Consumed	NC
Underground Parts	UP	Emergency	E
		Toxic	T

Plant Preference by Animal Kind:

Animal Kind: Livestock

Animal Type: Cattle

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	P	P	P	P	D	D	D	D	D
Sand Bluestem	Andropogon hallii	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Indian Ricegrass	Achnatherum hymenoides	EP	P	P	P	P	P	P	P	P	P	P	P	P
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Big Bluestem	Andropogon gerardii	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Switchgrass	Panicum virgatum	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
New Mexico Feathergrass	Hesperostipa neomexicana	EP	D	D	P	P	P	D	D	D	D	D	D	D
Needleandthread	Hesperostipa comata	EP	D	D	P	P	P	D	D	D	D	D	D	D
Annual Sunflower	Helianthus annuum	EP	U	U	U	U	U	D	D	D	U	U	U	U

Animal Kind: Livestock

Animal Type: Sheep

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Black Grama	Bouteloua eriopoda	EP	D	D	D	D	D	D	D	D	D	D	D	D
Indian Ricegrass	Achnatherum hymenoides	EP	P	P	D	D	D	D	D	D	D	P	P	P
Sideoats Grama	Bouteloua curtipendula	EP	D	D	D	D	D	D	D	D	D	D	D	D
Bigelow Sagebrush	Artemisia bigelovii	L/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Annual Sunflower	Helianthus annuum	EP	U	U	U	U	U	D	D	D	U	U	U	U

Animal Kind: Wildlife

Animal Type: Antelope

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Indian Ricegrass	Achnatherum hymenoides	EP	U	U	P	P	P	U	U	U	P	P	P	U
Wildbuckwheat	Eriogonum species	EP	U	U	D	D	D	D	D	D	U	U	U	U
Annual Sunflower	Helianthus annuum	EP	U	U	U	U	U	D	D	D	U	U	U	U
Skunkbush Sumac	Rhus trilobata	L/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S

SUPPORTING INFORMATION

Associated sites:

Site Name	Site ID	Site Narrative

Similar sites:

Site Name	Site ID	Site Narrative

State Correlation:

This site has been correlated with the following sites: _____

Inventory Data References:

Data Source	# of Records	Sample Period	State	County

Type Locality:

State: New Mexico

County: Chavez, De Baca, Guadalupe, Lincoln, San Miguel, Santa Fe, Torrance

Latitude: _____

Longitude: _____

Township: _____

Range: _____

Section: _____

Is the type locality sensitive? Yes ☐ No ☐

General Legal Description: _____

Relationship to Other Established Classifications:

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Other References:

Data collection for this site was done in conjunction with the progressive soil surveys within the Pecos-Canadian Plains and Valleys 70 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys: Chaves, De Baca, Guadalupe, Lincoln, Sna Miguel, Santa Fe, Torrance.

Characteristic Soils Are:

Benevides	Valent
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Other Soils included are:

Mido	
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Site Description Approval:

Author

Don Sylvester

Date

02/02/82

Approval

Donald H. Fulton

Date

03/03/82

Site Description Revision:

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Elizabeth Wright

Date

06/19/01

Approval

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Date

12/17/02